Claims

What is claimed is:

1. A method for providing arbitration for redundant controllers comprising:

providing logic for automatically determining which controller of redundant controllers is active controller, wherein outputs controlled by the redundant controllers are electrically connected together and provided as input to at least one device; and

providing a hardware output interlock for the redundant controllers to ensure that output controlled by only the active controller is enabled as input to the at least one device.

2. The method of claim 1, further comprising providing a unique identification for each controller of the redundant controllers, wherein the automatically determining comprises employing the unique identifications to automatically determine which controller of the redundant controllers is active controller.

3. The method of claim 2, wherein the providing of unique identifications for the redundant controllers comprises providing hardwired identification bits for each controller of the redundant controllers.

4. The method of claim 1, further comprising providing logic for monitoring the active controller for possible failure, and upon detection of failure, for automatically switching active control to another controller of the redundant controllers.

5. The method of claim 4, wherein the monitoring comprises employing a watch dog timer for the active controller of the redundant controllers, and detecting failure of the active controller when the watch dog timer of the active controller expires.

6. The method of claim 1, wherein providing the hardware output interlock includes providing a state machine to enable/disable outputs controlled by each controller of the redundant controllers and ensure that output of only the active controller is enabled as input to the at least one device.

7. The method of claim 6, further comprising employing a watch dog timer for each controller of the redundant controllers, and providing status of watch dog timer signals from the controllers of the redundant controllers to the state machine as input, wherein the state machine employs the status of the watch dog timer signals of the redundant controllers to determine which controller of the redundant controllers to have output enabled for input to the at least one device.

8. The method of claim 7, wherein providing the hardware output interlock includes providing the state machine for each controller of the redundant controllers, and wherein each state machine further employs as input a unique identification of the associated controller.

9. A method of arbitrating between redundant controllers comprising:

automatically determining which controller of the redundant controllers is active controller, wherein outputs controlled by the redundant controllers are electrically connected together and provided as input to at least one device;

monitoring the active controller for failure; and

upon detection of failure, automatically switching active control to another controller of the redundant controllers, wherein the automatic switching of active control to the another controller of the redundant controllers is transparent to the at least one device.

10. The method of claim 9, further comprising providing a unique identification for each controller of the redundant controllers, wherein the automatically determining comprises employing the unique identifications to automatically determine which controller of the redundant controllers is active controller.

11. The method of claim 9, wherein the monitoring comprises employing a watch dog timer for the active controller of the redundant controllers, and detecting failure of the active controller when the watch dog timer expires.

12. The method of claim 9, further comprising providing output interlock of the redundant controllers to ensure that output of only the active controller is enabled as input to the at least one device

13. The method of claim 12, wherein the providing includes providing a watch dog timer for each controller of the redundant controllers and providing status of watch dog timer signals associated with each controller of the redundant controllers for use in facilitating the output interlock of the redundant controllers.

14. A system for providing arbitration for redundant controllers comprising:

logic for automatically determining which controller of redundant controllers is active controller, wherein outputs of the redundant controllers are electrically connected together and provided as input to at least one device; and

a hardware output interlock for the redundant controllers to ensure that output controlled by only the active controller is enabled as input to the at least one device.

15. The system of claim 14, further comprising means for providing a unique identification for each controller of the redundant controllers, wherein the logic for automatically determining comprises means for employing the unique identifications to automatically determine which controller of the redundant controllers is active controller.

16. The system of claim 15, wherein the means for providing unique identifications for the redundant controllers comprises means for providing hardwired identification bits for each controller of the redundant controllers.

17. The system of claim 14, further comprising logic for monitoring the active controller for possible failure, and upon detection of failure, for automatically switching active control to another controller of the redundant controllers.

18. The system of claim 17, wherein the logic for monitoring comprises means for employing a watch dog timer for the active controller of the redundant controllers, and for detecting failure of the active controller when the watch dog timer of the active controller expires.

19. The system of claim 14, wherein the hardware output interlock includes a state machine to enable/disable outputs controlled by each controller of the redundant controllers and ensure that output of only the active controller is enabled as input to the at least one device.

20. The system of claim 19, further comprising means for employing a watch dog timer for each controller of the redundant controllers, and for providing status of watch dog timer signals from the controllers of the redundant controllers to the state machine as input, wherein the state machine employs the status of the watch dog timer signals of the redundant controllers to determine which controller of the redundant controllers to have output enabled for input to the at least one device.

21. The system of claim 14, wherein the hardware output interlock includes a state machine for each controller of the redundant controllers, and wherein each state machine further employs as input a unique identification of the associated controller.

22. A system for arbitrating between redundant controllers comprising:

means for automatically determining which controller of redundant controllers is active controller, wherein outputs of the redundant controllers are electrically connected together and provided as input to at least one device;

means for monitoring the active controller for failure; and

means for automatically switching active control to another controller of the redundant controllers upon detection of failure, wherein the automatic switching of active control to the another controller of the redundant controllers is transparent to the at least one device.

23. The system of claim 22, further comprising means for providing a unique identification for each controller of the redundant controllers, wherein the means for automatically determining comprises means for employing the unique identifications to automatically determine which controller of the redundant controllers is active controller.

24. The system of claim 22, wherein the means for monitoring comprises means for employing a watch dog timer for the active controller of the redundant controllers, and for detecting failure of the active controller when the watch dog timer expires.

25. The system of claim 22, further comprising means for providing output interlock of the redundant controllers to ensure that output of only the active controller is enabled as input to the at least one device

26. The system of claim 25, wherein the means for providing includes means for providing a watch dog timer for each controller of the redundant controllers and for providing status of watch dog timer signals associated with each controller of the redundant controllers for use in facilitating the output interlock of the redundant controllers.

27. At least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of arbitrating between redundant controllers, the method comprising:

automatically determining which controller of the redundant controllers is active controller, wherein outputs controlled by the redundant controllers are electrically connected together and provided as input to at least one device;

monitoring the active controller for failure; and

upon detection of failure, automatically switching active control to another controller of the redundant controllers, wherein the automatic switching of active control to the another controller of the redundant controllers is transparent to the at least one device.

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